



**Figure 1:** Water Tower, Ruakiwi Road, Hamilton.  
Image credits: Thornton, Geoffrey *Cast in Concrete*, 1996, p218, Reed Books, Auckland

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ruakiwi reservoir

assessment of effects – heritage

for

the hamilton city council

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auckland, june 2025



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## 1. executive summary

The existing Ruakiwi Road water tower reservoir is included in the Hamilton Council District Plan *Schedule 8A: Built Heritage (structures, building, and associated sites)* as a Category A place (District Plan Reference H27, Map 45B) being an historic place of highly significant heritage value and is a place assessed as being of outstanding or high value in relation to one or more of the heritage assessment criteria and is considered to be of outstanding or high heritage value locally, regionally or nationally. The water tower is a relatively rare example of its type and is an important example of a comparatively unusual building type in New Zealand. Structures for municipal water storage were often utilitarian in nature, however the Hamilton water tower is one of a small number of these structures that were designed to be architectural landmarks.

The water tower is also recognised in the New Zealand Heritage List Administered by Heritage New Zealand Pouhere Taonga as a Category 2 place (List Entry 4210). The historic heritage-listed Ruakiwi Water Tower lies within the Destination Open Space Zone and is an area governed by Designation A67.

The existing heritage-listed water tower is located on land within an existing Designation. A Notice of Requirement for an alteration to that Designation is required in order to build two new replacement water reservoirs within the Lake Domain on Ruakiwi Road in central Hamilton. The HCC has determined that the central city needs two new water reservoirs providing a total capacity of 50 million litres to be located near to the existing heritage-listed water tower reservoir in order to service most of central Hamilton with potable water fed via gravity supply. The 1932 water tower is not able to be integrated into the proposed gravity-fed potable water supply. Acknowledging its historic heritage values, and the public benefit arising from those values, it is proposed to retain and conserve the heritage-listed water tower.

The proposal, while making the heritage-listed water tower redundant as a reservoir, does not promote the loss of the tower or of those heritage values for which it has been recognised. In line with section 6(f) of the RMA and the effect given that provision through the ODP, protection is assessed in terms of appropriate subdivision, use, and development. In this proposal the adjacent development of gravity supplied potable water is considered to be an appropriate use and development of the existing (and enlarged) designated area. The proposed development retains, protects and enhances the heritage values of the existing water tower. The separation of the proposed new reservoirs from the existing heritage tower has been carefully considered to respect and maintain sufficient distance and relative height so as not to dominate the heritage item or its setting and context.

The proposal looks to conserve the heritage-listed water tower. Future appropriate adaptive reuse options are being considered by Council separately to this application and look to enhance the public benefit arising from this asset.

## 2. commission

**archifact – architecture & conservation ltd [archifact]** was commissioned by BBO on behalf of the Hamilton City Council in March 2025.

## 3. project description

In November 2022, HCC secured Government Infrastructure Acceleration Fund (IAF) support for specific infrastructure projects. The purpose of the IAF agreement is to enable infrastructure development that facilitates the delivery of residential housing in the central city. The Reservoirs and Pump Station project (**Project**) is a critical infrastructure initiative aimed at improving the efficiency of water supply from the reservoir into the central city, thereby supporting residential and commercial/office development along with fire fighting water pressure requirements.

This Project is essential to meet the demands of a growing population. Current growth projections and modelling indicate that the 25 megalitre reservoir will be sufficient to meet population needs until at least 2041. Beyond that point, a second 25 megalitre water reservoir will be required to ensure continued service capacity.

HCC in its capacity as a Requiring Authority (HCC) will undertake the planning work for both reservoirs at this time but will only construct one reservoir under the Agreement. The design and construction of the second reservoir will be determined at a later date based on existing and forecast population growth in the central city.

HCC has conducted a comprehensive investigation and site assessment to identify a preferred location for the new reservoir and an associated booster pump station. The evaluation considered 30 potential sites situated between the existing Waiora Water Treatment Plant (WTP) and the Ruakiwi Road Reservoir (RRR). Each site was assessed based on several key criteria, including land ownership, site size, elevation, proximity to the bulk water network and the WTP, energy efficiency (a critical factor for resilience and operations), distance to the central city, and underlying geological conditions.

Based on the outcomes of the investigation and site assessment, HCC has identified the Ruakiwi Road Reserve site as the preferred location. As a result, further investigation and concept design work have been initiated for this site to support the next phase of project development.

A further options analysis was undertaken for the Ruakiwi Road site to refine the site layout to best meet the project objectives while striving to address effects on the Lake Domain Reserve and the surrounding residential area as much as possible, with the concept site layout reflecting that balance.

The purpose of this report is to provide sufficient technical information in relation to historic heritage to support the Notice of Requirement for an Alteration to Designation.

### **project benefits:**

- Project will support an increased number of people living in the central city.
- An increased level of resilience and reliability of waters infrastructure within the central city area.

- Enable economic growth in the central city with the provision of new treated water capacity.
- A fit for purpose water asset that meets the operational and maintenance needs of the business and where the whole of asset lifecycle cost is considered.
- Ensuring the security of the supply and associated assets are maintained and meet the expectations of the Water Regulator.

**project facts:**

Fact		Agreed words or number		
Reservoir internal diameter		62 metres		
Reservoir external diameter		62.65 metres (325 mm thick walls)		
Reservoir capacity		25 megalitres (million litres)		
Reservoir walls		9.85 m high (to underside of roof)		
Reservoir top water level		RL = 69.95 metres		
Reservoir bottom water level		RL = 61.35 metres		
Design life		100 years		
HCC as applicant		Requiring Authority		
HCC as regulator		Council as regulator		
HCC as asset owner		Asset owner		
<b>Earthworks volumes Stage 1</b>				
<i>Cut = 10,910</i>	<i>Max depth = -7.86</i>	<i>Fill = 5,745</i>	<i>Max depth = 3.5 m</i>	<i>Net (M2) 5,165</i>
<b>Earthworks volumes Stage 2</b>				
<i>Cut = 6,692</i>	<i>Max depth = -5.55</i>	<i>Fill = 5,858</i>	<i>Max depth = 5.4 m</i>	<i>Net (M2) 834</i>

[https://bbonz-my.sharepoint.com/personal/cdawson\\_bbo\\_co\\_nz/Documents/HCC Central City Reservoir NOR/Reporting/2-NoR/Draft Reports 19 June/Reviewed reports/IAF Reservoir Common project description.docx](https://bbonz-my.sharepoint.com/personal/cdawson_bbo_co_nz/Documents/HCC%20Central%20City%20Reservoir%20NOR/Reporting/2-NoR/Draft%20Reports%2019%20June/Reviewed%20reports/IAF%20Reservoir%20Common%20project%20description.docx)

#### 4. brief

The brief for this *Assessment of Effects – Heritage* report required **archifact** to form a professional opinion assessing the proposed decommissioning of the heritage-listed water tower, a building listed in the Hamilton City Council [**HCC**] Operative District Plan [**ODP**] as a category A place of historic heritage value and recognised by Heritage New Zealand Pouhere Taonga [**HNZPT**] as a Category B place.

It is proposed to replace the water storage functions of the heritage water tower with two 25ML (25 Million litre) potable water reservoirs adjacent to the existing heritage-listed water tower capable to capitalize on the natural elevation of the site and provide a gravity fed water supply to central Hamilton. This report assesses the effects of this proposal with respect to the provisions of the RMA, particularly Section 6(f) and the protection afforded historic heritage from inappropriate subdivision, use, and development.

This *Assessment of Effects – Heritage* relies on the respective heritage assessments prepared on behalf of the Hamilton City Council and HNZPT. The recognised heritage values of the water tower are not contested.

## 5. identification of the place

### 5.1 location

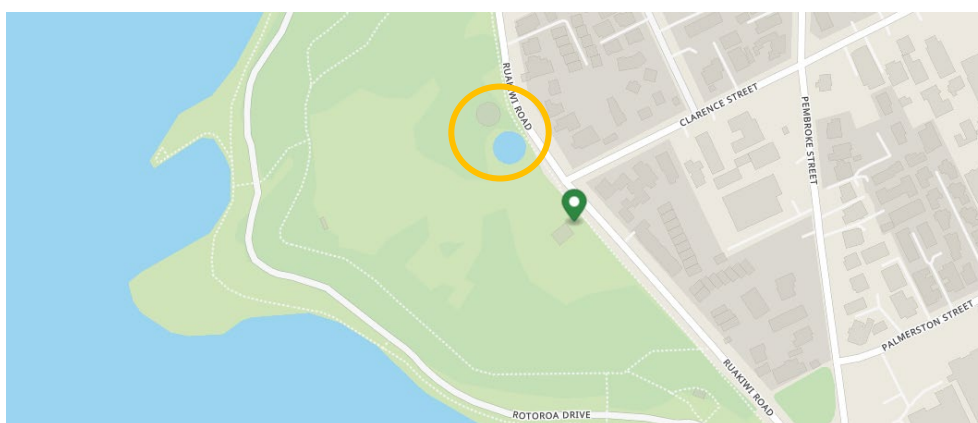


**Figure 2:** Aerial view of the wider context of the historic heritage-listed Ruakiwi Road Tower Reservoir. The heritage-listed water tower is arrowed. (HCC Geomaps)

### 5.2 address

18 Ruakiwi Road, Hamilton.

The address appears to relate to a former dwelling that was located adjacent to the existing heritage water tower. That dwelling has been demolished. The Hamilton City Council GIS mapping fixes a “pin” to indicate 18 Ruakiwi Road to the south of the heritage tower reservoir.



**Figure 3:** Extract from the Hamilton City Council GIS maps showing the site identified at 18 Ruakiwi Road. The historic heritage-listed tower reservoir is circled and is to the immediate north of the map “pin” (the “pin” describes a building demolished some time ago).

NZTM reference:

Easting: 1800560, Northing: 5814402

### 5.3 ownership

The Ruakiwi Water Tower is owned by the Hamilton City Council.

### 5.4 legal description

Lot 2 DP 16167 in Certificate of Title 4410124.

### 5.5 local authority status

The historic heritage-listed Ruakiwi Water Tower lies within the Destination Open Space Zone and is an area governed by Designation A67. This area is identified in the map generated by BBO at Figure 3 below.

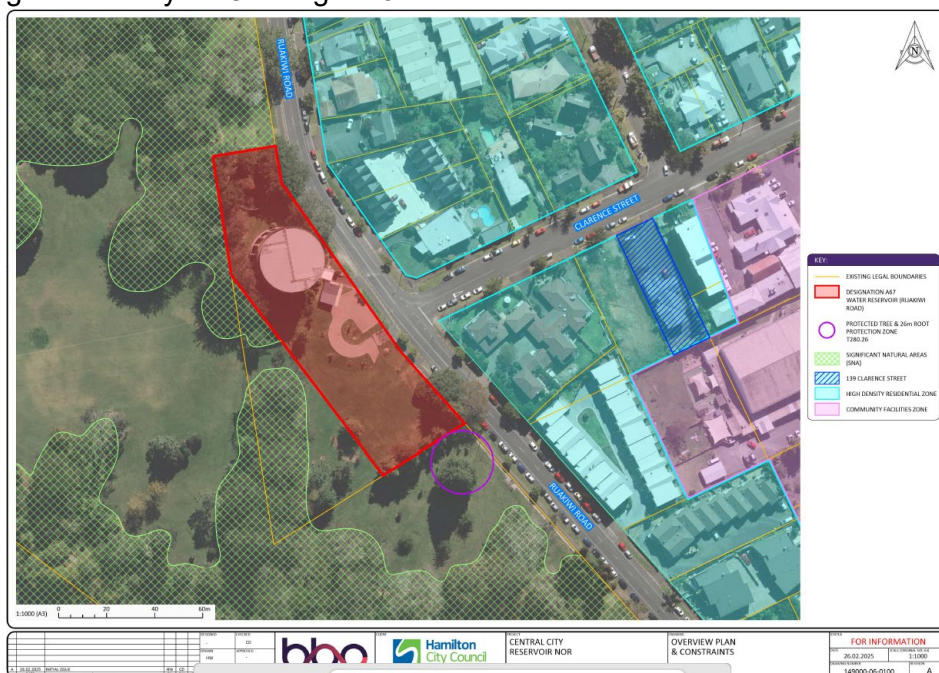


Figure 4: BBO plan showing the extent of the existing Designation 67 area.

### 5.6 schedule 8A

The Ruakiwi Water Tower is included in *Schedule 8A: Built Heritage (structures, building, and associated sites)* in the HCC ODP as a Category A place with ID# H27 Map 45B, being an historic place of highly significant heritage value and is a place assessed as being of outstanding or high value in relation to one or more of the heritage assessment criteria and are considered to be of outstanding or high heritage value locally, regionally or nationally..

The Water Tower has been recognised in the ODP for the following qualities:

- a - historic qualities
- b – physical/aesthetic/architectural qualities;
- c – context of group qualities
- d – technical qualities
- f – cultural qualities.

### 5.7 heritage new zealand registration

The Water Tower is listed in the New Zealand Heritage List administered by HNZPT as a Category 2 place, List # 4210.

## 5.8 archaeological status

The site does not appear on the ArchSite national database of recorded archaeological sites in Aotearoa New Zealand administered by the New Zealand Archaeological Association.

## 6. methodology

### 6.1 assessment of effects - heritage

The effects arising from the proposed works are measured against the assessment of heritage values recognised in the HCC *Built Heritage Inventory Record Form* dated 2012 and in the HNZPT List record. It is noted that the HCC *Inventory Record Form* predates the recent Plan Change 9 adoption of revised assessment threshold criteria, but that the recognised historic heritage values in that assessment are not contested.

### 6.2 conservation practice

Consideration of conservation issues relating to this place are made in accordance with the principles of the *ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value* (2<sup>nd</sup> edition, 2010) (**the Charter**) and with the respective HCC and HNZPT Heritage Assessments.

### 6.3 considerations

This *Heritage Assessment of Effects - Heritage* has been based on information available at the time. A number of site visits have been conducted, the first being undertaken on the 28th of March 2025. Unrestricted access from within the public realm has been made in order to view the exterior of the building and to consider the wider setting, including from vantage points within the wider Hamilton Lake Domain.

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An archaeological assessment has been commissioned by the HCC from Sian Keith.

Consultation has been undertaken with the HCC and with HNZPT, and remains ongoing.

This assessment is based on drawings prepared by **BHW Studio** and **Edwards White Architects** (in association).

## 7. historic heritage values<sup>1</sup>

The Ruakiwi Water Tower is included in *Schedule 8A: Built Heritage (structures, building, and associated sites)* of the HCC ODP as a Category A place with ID# H27 Map 45B, being an historic place of highly significant heritage value and is a place assessed as being of outstanding or high value in relation to one or more of the heritage assessment criteria and is considered to be of outstanding or high heritage value locally, regionally or nationally.

The Water Tower is listed in the New Zealand Heritage List administered by HNZPT as a Category 2 place, List # 4210.

### ODP heritage significance summary

The place is scheduled in Category A. The place is considered to be of *highly significant heritage value* locally, regionally and nationally, and has *outstanding* or *high* significance in relation to the following criteria:

- a) *Historic Qualities*: High
- b) *Physical/Aesthetic / Architectural Qualities*: High
- c) *Context or Group Values*: High
- d) *Technological Qualities*: outstanding
- e) *Archaeological Qualities*; (not assessed)
- f) *Cultural Qualities*: High.

Built in 1932, the tower is considered to be of *highly significant heritage value*. It is associated with an important aspect of Hamilton's history; the development of infrastructure and public services. It is of great significance for its innovative structural design using reinforced concrete and welded steel. It is a comparatively rare example of a utilitarian structure, designed to be an architectural landmark. It demonstrates the skills of Borough engineer Rupert Worley, who became of New Zealand's most respected consulting engineers and project engineer James Baird, who went on to become Borough Engineer and City Engineer. The tower is also significant for its associations with Christchurch-based contractors WM Fadder & Co Ltd and partner in the firm, A H Barltrop who were responsible for construction of the tower. Set in an elevated position within Lake Domain it is a landmark and makes an important contribution to the continuity and character of the Lake Domain landscape in Ruakiwi Road.

## 8. development proposal

The existing heritage-listed water tower is located on land within an existing Designation. A Notice of Requirement for an alteration to that Designation is required in order to build two replacement water reservoirs within the Lake Domain on Ruakiwi Road in central Hamilton is proposed. The HCC engineer has determined that the central city needs two new water reservoirs providing a capacity of 50 million litres to be located near to the existing heritage-listed water tower reservoir in order to have sufficient elevation to service most of central Hamilton with potable water via gravity supply.

As part of the proposed work, consideration of the impacts on the existing heritage tower in terms of the location and proximity of the new reservoirs requires careful assessment.

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<sup>1</sup> For a more complete summary of the historic heritage values of the Ruakiwi Reservoir this section should be read in conjunction with the *Ruakiwi Reservoir historic heritage values report prepared by Archifact* and attached as Appendix 2

Equally, what appropriate alternative uses the existing water Tower could be used for in order to maintain and, where appropriate, enhance its historic heritage values while no longer serving its original functions are to be considered in response to questions raised by the public, Council Staff, and elected members of Council.

## 9. heritage impact assessment

### 9.1 methodology

Having regard to the historic heritage values identified above, this heritage impact assessment considers the effects of the proposed construction of two new water reservoirs adjacent to the existing Ruakiwi Road heritage-listed tower against provisions at Volume 1 Chapter 19 of the Operative District Plan.

The recent Decisions Version of Plan Change 9 was issued in April 2025 and as the Objectives, Policies and Rules are not subject to appeal they have been treated as if they were operative.

Notably, the purpose of Chapter 19 of the ODP recognises at 19.1 that:

- d. *Rapid growth over the last decade has resulted in redevelopment and intensification of both residential and business [sites](#) and in some circumstances this has led to the loss of heritage values. Demolition of heritage buildings often results because a viable use has not been, or cannot be, identified, or because of the high cost of maintenance, [restoration](#) or adaptation. [Heritage items](#) are a finite resource which cannot be replaced.*
- e. *Unsympathetic alterations or additions can damage heritage values associated with heritage buildings or structures. While modifications are often needed to make built heritage usable (e.g. telecommunication upgrading, energy-efficiency and conforming with fire, earthquake and access standards) these need to be undertaken in a manner that protects the heritage value.*
- f. *Removing buildings from their original setting can change their context and diminish their historic significance. The modification of the surrounding [environment](#) can also reduce heritage values. For example, the removal of mature trees and vegetation, changes to [fences](#), or the addition of new [buildings](#) on the site can all reduce the overall heritage value.*

### 9.2 19.3.1 Activity Table

The proposed works comprise the following activities and associated activity status (those activities not listed below are considered not applicable to this application):

	<i>Maintenance and repair</i>	
	<i>Accessory buildings or new buildings within any scheduled site ranked A</i>	
	<i>Alterations or additions (excluding maintenance and repair) to the exterior of any structure or building ranked A</i>	
	<i>Earthquake strengthening works to the external façade of any structure or building ranked A</i>	

	<i>Erecting, constructing or extending any structure or fence on a site</i>	

In considering an application for the overall **Discretionary** activity, this assessment considers the relevant *Objectives, Policies, and Rules* at *Volume 1, Chapter 19* and *Volume 2, Appendix 1.3.3 E – Heritage Values* of the ODP. In addition to these *Objectives, Policies* and *Rules* the *Assessment Criteria* found at *Volume 2, Appendix 1.3.3 E – Heritage Values* have also been considered.

### 9.3 HCC ODP Volume 1, Chapter 19: Objectives, Policies, and Rules

Objective	
<p><b>19.2.1</b> Significant buildings, structures, sites and items that define the City’s historic heritage are identified and protected.</p>	<p><b>Archifact comment</b> The Ruakiwi Water Tower is included in <i>Schedule 8A: Built Heritage (structures, building, and associated sites)</i> of the HCC ODP as a Category A place with ID# H27 Map 45B, being an historic place of highly significant heritage value and is a place assessed as being of outstanding or high value in relation to one or more of the heritage assessment criteria and are considered to be of outstanding or high heritage value locally, regionally or nationally.</p> <p>The Water Tower is listed in the New Zealand Heritage List administered by HNZPT as a Category 2 place, List # 4210.</p>

Policies	
<p><b>19.2.1a</b> The City’s historic heritage shall be protected from the adverse effects of subdivision, use and development.</p>	<p><b>Archifact comment</b> The proposal does not lessen the heritage values for which the water tower has been recognised, and the adjacency of the proposed reservoirs will maintain an association with the heritage tower with that activity while enabling conservation and potential adaptive reuse options are to be considered.</p>
<p><b>19.2.1b</b> Ensuring that where features have been destroyed or damaged, the historical heritage values of these sites are recorded and recognised to ensure the historical legibility of Hamilton City.</p>	<p><b>Archifact comment</b> Not applicable as it is not proposed to destroy or damage the listed water tower. The respective heritage list record in both the HCC ODP and by HNZPT provide a detailed record of the values of this place. Recent revisions to the assessment criteria and heritage thresholds as a consequence of Plan Change 9 might warrant reappraisal of the place using those updated criteria and thresholds, however that is a process for the Council to undertake at a later date.</p>
<p><b>19.2.1c</b> Subdivision and development shall adhere to the conservation principles of International Council on Monuments and Sites (ICOMOS) being the New Zealand Charter (2010) for the Conservation of Places of Cultural Heritage Value where applicable.</p>	<p><b>Archifact comment</b> The proposal has been guided by Archifact – Architecture &amp; conservation Ltd and its director, Adam Wild, is an expert member of ICOMOS Aotearoa New Zealand. Under that guidance the proposed conservation of the water tower will adhere to the principles of good conservation practice espoused in the ICOMOS Aotearoa New Zealand <i>Charter</i>.</p>

<p><b>19.2.2</b> The heritage values of a diverse and representative range of natural, physical and cultural resources are protected.</p>	<p><b>Archifact comment</b> The water tower is relatively rare example of its type and is an important example of a comparatively unusual building type in New Zealand. Structures for municipal water storage were often utilitarian in nature, however the Hamilton water tower is one of a small number of these structures that were designed to be architectural landmarks. Other significant examples include the Addington water tower in Christchurch (1883) built to provide a high-pressure water supply to the railway workshops; the Bastia Hill water tower in Wanganui (1927); the Hawera water tower built (1914) for municipal supply; the Bulls water tower and the Cambridge water tower built in 1902-3.</p>
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Policies	
<p><b>19.2.2 (a)</b> Items of significant heritage value (buildings, objects, areas, trees and sites) shall be scheduled.</p>	<p><b>Archifact comment</b> The Ruakiwi Water Tower is included in <i>Schedule 8A: Built Heritage (structures, building, and associated sites)</i> of the HCC ODP as a Category A place with ID# H27 Map 45B, being an historic place of highly significant heritage value and is a place assessed as being of outstanding or high value in relation to one or more of the heritage assessment criteria and are considered to be of outstanding or high heritage value locally, regionally or nationally.  The Water Tower is listed in the New Zealand Heritage List administered by HNZPT as a Category 2 place, List # 4210.</p>
<p><b>19.2.2 (b)</b> The loss of heritage values associated with scheduled items shall be avoided.</p>	<p><b>Archifact comment</b> The proposal, while making the heritage-listed water tower redundant as a reservoir, does not promote the loss of the tower or of those heritage values for which it has been recognised.</p>
<p><b>19.2.2 (c)</b> Outstanding examples of a particular type of site, or sites that are highly significant to the community shall be scheduled.</p>	<p><b>Archifact comment</b> The water tower is relatively rare example of its type and is an important example of a comparatively unusual building type in New Zealand. Structures for municipal water storage were often utilitarian in nature, however the Hamilton water tower is one of a small number of these structures that were designed to be architectural landmarks.</p>
<p><b>19.2.3</b> The heritage values of significant buildings, structures and their immediate surroundings are protected.</p>	<p><b>Archifact comment</b> In line with section 6(f) of the RMA and the effect given that provision through the ODP, protection is assessed in terms of appropriate subdivision, use, and development. In this proposal the adjacent development of gravity supplied potable water is considered to be an appropriate use and development of the existing (and enlarged) designated area and recognises the importance of the elevated site in providing gravity fed water to the central city.</p>
<p><b>19.2.3 (a)</b> Demolition or relocation of buildings and structures ranked A in Schedule 8A shall be avoided.</p>	<p><b>Archifact comment</b> Application does not seek to demolish the ODP Category A heritage-listed item.</p>

Policies	
<p><b>19.2.3 (c)</b> Subdivision and development shall retain, protect and enhance the heritage values of any building or structure listed within Schedule 8A.</p>	<p><b>Archifact comment</b> The proposed development retains, protects and enhances the heritage values of the heritage water tower. The offset of the proposed new reservoirs adjacent to the heritage tower has been carefully considered to respect and maintain sufficient distance and relative height so as not to dominate the heritage item or its setting and context.</p>
<p><b>19.2.3 (d)</b> Subdivision and development shall avoid any potential cumulative adverse effects on any building or structure listed in Schedule 8A.</p>	<p><b>Archifact comment</b> The development of the proposed two new reservoirs has been carefully considered to avoid cumulative adverse effects on the heritage-listed water tower and also in consideration of its immediate setting and wider Hamilton Lake Domain context. The development places the new reservoirs in a location separate from the heritage tower, while capitalising on the elevation of this location in order to ensure the supply of potable water for the future central city area can be gravity fed.</p>
<p><b>19.2.3 (e)</b> Heritage buildings and structures shall be used in a manner that ensures essential heritage qualities are not damaged or destroyed.</p>	<p><b>Archifact comment</b> The proposal looks to conserve the heritage-listed water tower. Future appropriate adaptive reuse options are being considered by Council separately to this application and look to enhance the public benefit arising from this asset.</p>
<p><b>19.2.3. (f)</b> The design, materials and finish of any development shall be consistent with identified heritage values.</p>	<p><b>Archifact comment</b> The proposed design, materiality, and finishes of the new reservoirs have been carefully considered to reduce the perceived bulk of the two reservoirs by integrating them behind a single subservient structure.</p>
<p><b>19.2.3 (g)</b> The continued use or adaptive reuse of any building or structure of identified heritage value shall be encouraged.</p>	<p><b>Archifact comment</b> Future appropriate adaptive reuse options are being considered by Council separately to this application and look to enhance the public benefit arising from this asset.</p>
<p><b>19.2.3 (h)</b> The site surrounding the heritage building or structure shall be protected to the extent that it contributes to the heritage values.</p>	<p><b>Archifact comment</b> The proposal is mindful of the immediate setting surround in the heritage-listed water tower and of the wider context, particularly that engaged within the Hamilton Lake Domain. The proposal has been carefully designed to consider the wider setting and has offset the proposed reservoirs as far as is possible while still capitalising on the site's topographic level that enables a gravity fed potable water supply to the city centre.</p>
<p><b>19.2.3 (i)</b> Encourage the strengthening of buildings in Schedule 8A to increase their ability to</p>	<p><b>Archifact comment</b> Engineering calculations were undertaken in 2009 by Aurecon in order to assess the seismic performance of the existing Ruakiwi Road heritage reservoir. That assessment has been made</p>

withstand future earthquakes while minimising the significant loss of associated heritage values.	against the provisions of the New Zealand Society for Earthquake Engineers (NZSEE) Study Group on Storage Tanks: “Seismic Design of Storage Tanks 2008” (Final Draft ) applicable to new storage tank structures (ie as a “percentage of new tank standard” (%NTS)) shows that the heritage-listed water tower has a seismic capacity of 20%. Further assessment of the structure will be undertaken and a programme of work to strengthen the structure determined based on future use and Importance Level requirements.
<b>Rules</b>	
<ul style="list-style-type: none"> <li>• <b>19.3.1 (a)</b> <i>Maintenance and repair of heritage ranked building is <b>Permitted</b></i></li> </ul>	<b>Archifact comment</b> Not applicable, maintenance and repair of the water tower will be carried out as a permitted activity after the decommissioning of the structure.
<ul style="list-style-type: none"> <li>• <b>19.3.1 (b)</b> <i>Internal alterations and buildings is <b>Permitted</b>.</i></li> </ul>	<b>Archifact comment</b> N/A
<ul style="list-style-type: none"> <li>• <b>19.3.1 (c)</b> <i>Accessory buildings or new buildings within any scheduled site ranked A - <b>Discretionary</b></i></li> </ul>	<b>Archifact comment</b> The proposal seeks consent for the construction of two new potable water reservoirs (providing a total capacity of 50 million litres) within part of the existing designation area (A67) and within a new designation area as indicated in the proposed “designation plan”.
<ul style="list-style-type: none"> <li>• <b>19.3.1 (f)</b> <i>Alterations or additions (excluding maintenance and repair) to the exterior of any structure or building ranked A is <b>Discretionary</b>.</i></li> </ul>	<b>Archifact comment</b> Future appropriate adaptive reuse options are being considered by Council separately to this application and look to enhance the public benefit arising from this asset.
<ul style="list-style-type: none"> <li>• <b>19.3.1 (j)</b> <i>Earthquake strengthening works to the external façade of any structure or building ranked A is <b>Restricted Discretionary</b>.</i></li> </ul>	<b>Archifact comment</b> Further assessment of the structure will be undertaken and a programme of work to strengthen the structure determined based on future use and Importance Level requirements for which an application for a Restricted Discretionary Activity resource consent will be made.

## 9.4 discretionary assessment criteria

In addition to the Objectives, Policies and Rules addressed above, the assessment criteria found at *Volume 2, Appendix 1.3.3 E – Heritage Values* are considered:

E	Heritage Values	
	General	
E1	<p>The extent to which the proposal, development, excavation or subdivision of a historic heritage site or place:</p>	
	<p><i>Is consistent with the identified heritage values, including scale, design, form, style, bulk, height, materials and colour, and retains, protects or enhances the historic context.</i></p>	<p><b>Archifact comment</b></p> <p>The new reservoirs continue to tell the story of water reservoirs along this ridge line. The corten folded channel louvred screen and the mass block retaining wall that encapsulates the two proposed reservoirs integrate the new building within the landscape while ensuring that the scale and form of the new reservoirs does not compete with or dominate the heritage tower. The proposed landscaping presents an opportunity to weave the old and new together, while softening the hard edges and mass of the new buildings and reinserting the human scale into the site.</p> <p>Materiality integrates the proposed development with the landscape as the materials palette has been influenced by the ridgeline and the visual connections to the surrounding volcanic cones, the concrete heritage tower, and the new reservoirs, and of water.</p>  <p><b>Figure 5:</b> southwest elevation showing the elevation scale, height and integration into the landscape relative to the heritage tower.</p>
	<p><i>Provides for design, layout or location of the activity, including associated building platforms, vehicle access and services on site in a manner that will minimise the disturbance of the site.</i></p>	<p><b>Archifact comment</b></p> <p>multiple pathways linked with a consistent and cohesive expression of materials, identity, and sense of place. The reservoir path is the key move to tie the massive reservoirs to the park and will anchor the new built form to the site. From this, the new path network extends into and across the site to connect to the existing path network of the wider Lake Domain. Pathways link the key destination points, integrating the new structures with the Lake Domain and Ruakiwi Road/Central city.</p>

	<i>Provides for the on-going maintenance of the site to ensure that the site is preserved and that damage does not occur.</i>	<b>Archifact comment</b>
	<i>In Schedule 8A of Appendix 8 maintains visual linkages between the building or structure and the street.</i>	<b>Archifact comment</b> space between the old and new reservoirs creates a view from Clarence St through to the Park. Opportunities also exist to obtain views into the Valve Chamber and reveal the inner workings of Reservoirs and around the site to provide points of interest and respond to the site. A series of paths are proposed to traverse various heights and positions, creating a number of key moments where the public can look out to the Lake Domain below and the landscape beyond, including the maunga of the west (Pirongia, Karioi, Kakepuku and Te Kawa).
	<i>Is compatible with the reasons for inclusion of the building, structure or site and its significance in Schedules 8A or 8B, of Appendix 8.</i>	<b>Archifact comment</b>
	<i>Addresses cumulative effects on heritage values.</i>	<b>Archifact comment</b>

	<i>Considers the irreversibility of an effect (e.g. the loss of unique features)</i>	<b>Archifact comment</b> The proposal does not present irreversible effects on the heritage tower itself. Long-term effects arising from the proximity of the proposed reservoirs are heavily mitigated through location, design, relative height, materiality, and cultural and landscape integration.
	<i>Considers the opportunities for remediation and the costs and technical feasibility of remediation.</i>	<b>Archifact comment</b> N/A
	<i>Considers the resilience of the heritage feature to change (e.g. the ability of the feature to assimilate change, or the vulnerability of the feature to change).</i>	<b>Archifact comment</b> The proposal does not lessen the heritage values for which the water tower has been recognised, and the adjacency of the proposed new reservoirs will maintain an appropriate association with the heritage tower enabling conservation and potential adaptive reuse options to be considered. Future appropriate adaptive reuse options are being considered by Council separately to this application and look to enhance the public benefit arising from this asset
	<i>Adheres to the conservation principles of International Council on Monuments and Sites (ICOMOS) New Zealand Charter (2010) for the Conservation of Places of Cultural Heritage Value, where applicable.</i>	<b>Archifact comment</b> The proposal has been guided by Archifact – Architecture & conservation Ltd and its director, Adam Wild, who is an expert member of ICOMOS Aotearoa New Zealand. Under that guidance the proposed conservation of the water tower will adhere to the principles espoused in the ICOMOS Aotearoa New Zealand Charter
	<i>Includes consultation with Heritage New Zealand Pouhere Taonga.</i>	<b>Archifact comment</b> Consultation has been undertaken with the HCC and with HNZPT and remains ongoing.
	<i>In the event of relocation, has adequately considered whether the relocation is necessary and whether appropriate measures are proposed to ensure any potential adverse effects on heritage values are</i>	<b>Archifact comment</b>

	<i>avoided, remedied or mitigated.</i>	
	<i>Incorporates proposed planting, fencing and identification (e.g. signage) sufficient to ensure site recognition.</i>	<b>Archifact comment</b>
	<i>The extent to which the heritage values of any buildings or places identified in Schedules 8A or 8B of Appendix 8 would be adversely affected by the proposal.</i>	<b>Archifact comment</b>
	<i>The extent to which the proposal including modification, re-use, renovation or restoration to the building or structure:</i>	
	<i>Contributes positively to the character of the surrounding area and maintains the relationship of the building or structure with its setting.</i>	<b>Archifact comment</b> The proposed development retains, protects and enhances the heritage values of the heritage water tower. The offset of the proposed new reservoirs adjacent to the heritage tower has been carefully considered to respect and maintain sufficient distance and relative height so as to not dominate the heritage item or its setting and context. The development of the proposed two new reservoirs has been carefully considered to avoid cumulative adverse effects on not only the heritage-listed water tower, but also in consideration of its immediate setting and wider Hamilton Lake context. The proposal is mindful of the immediate setting surround in the heritage-listed water tower and of the wider context, particularly that engaged within the Hamilton Lake Domain. The proposal has been carefully designed to consider the wider setting and has offset the proposed reservoirs as far as is possible while still capitalising on the site's topographic level that enables a gravity fed potable water supply to the city centre.
	<i>Will maintain and enhance environmental, social, or cultural effects for the wider community.</i>	<b>Archifact comment</b> Long-term effects arising from the proximity of the proposed reservoirs to the heritage-listed tower are heavily mitigated through location, design, relative height, materiality, and cultural and landscape integration. The design of the proposed reservoirs elegantly integrates art, interpretation, and way finding elements into the built form and landscaping to reveal the stories and cultural narratives of the site. The proposed project is mindful of the wider implications and opportunities on the wider setting and has been designed to capitalise

		appropriately on the maintenance and enhancement of benefits for the wider public as something more than simply utilitarian infrastructure.
	<i>Considers the extent to which the primary façade of a scheduled building is proposed to be altered, and whether the main determinants of the style and character, and the heritage significance, of the building are maintained or restored.</i>	<b>Archifact comment</b>
	<i>Ensures new buildings respect the design, scale and materials of any original façade.</i>	<p><b>Archifact comment</b></p> <p>The proposed corten folded channel louvred screen and the mass block retaining wall that encapsulates the two proposed reservoirs integrate the reservoirs with the landscape while ensuring that the scale and form of the new does not compete with or dominate the heritage tower. The proposed landscaping presents an opportunity to weave the old and new together, while softening the hard edges and mass of the reservoir enclosure and reinserting the human scale into the site.</p> <p>The materiality integrates the proposed reservoirs with the landscape as the material palette has been influenced by the ridgeline and the visual connections to the surrounding volcanic cones, the concrete heritage tower, and of water.</p>

## 10. conclusion

The Ruakiwi Water Tower is included in *Schedule 8A: Built Heritage (structures, building, and associated sites)* of the HCC ODP as a Category A place with ID# H27 Map 45B, being an historic place of highly significant heritage value and is a place assessed as being of outstanding or high value in relation to one or more of the heritage assessment criteria and are considered to be of outstanding or high heritage value locally, regionally or nationally. The Water Tower is listed in the New Zealand Heritage List administered by HNZPT as a Category 2 place, List # 4210.

The proposal does not lessen the heritage values for which the water tower has been recognised, and the adjacency of the proposed reservoirs will maintain an association with the heritage tower with that activity while enabling conservation and potential adaptive reuse options are to be considered. The proposal, while making the heritage-listed water tower redundant as a reservoir, does not promote the loss of the tower or of those heritage values for which it has been recognised. The proposed development retains, protects and enhances the heritage values of the heritage water tower. The offset of the proposed new reservoirs adjacent to the heritage tower has been carefully considered to respect and maintain sufficient distance and relative height so as not to dominate the heritage item or its setting and context. The proposal is mindful of the immediate surrounds of the heritage-listed water tower and of the wider context,

particularly that engaged within the Hamilton Lake Domain. The proposal has been carefully designed to consider the wider setting and has offset the proposed reservoirs as far as is possible while still capitalising on the site's topographic level that enables a gravity fed potable water supply to the city centre.

In line with section 6(f) of the RMA and the effect given that provision through the ODP protection is assessed in terms of appropriate subdivision, use, and development. In this proposal the adjacent development of gravity supplied potable water is considered to be an appropriate use and development of the existing (and enlarged) designated area. The proposal looks to conserve the heritage-listed water tower. Future appropriate adaptive reuse options are being considered by Council separately to this application and look to enhance the public benefit arising from this asset.

## A. appendix A - historic heritage values



**Figure 6:** Water Tower, Ruakiwi Road, Hamilton.  
Image credits: Thornton, Geoffrey *Cast in Concrete*, 1996, p218, Reed Books, Auckland.

# ruakiwi reservoir

## historic heritage values

for  
the hamilton city council

july 2025

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**attention:**       **Chris Dawson**

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auckland, july 2025

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## 1. executive summary

The Ruakiwi Water Tower is included in *Schedule 8A: Built Heritage (structures, building, and associated sites)* of the HCC ODP as a Category A place with ID# H27 Map 45B, being an historic place of highly significant heritage value and is a place assessed as being of outstanding or high value in relation to one or more of the heritage assessment criteria and are considered to be of outstanding or high heritage value locally, regionally or nationally.

The water tower is also recognised through its inclusion in the New Zealand Heritage List administered by Heritage New Zealand Pouhere Taonga as a Category 2 place (List Entry 4210).

The place is considered to be of *highly significant heritage value* and has *outstanding* or *high* significance in relation to the following criteria:

- g) *Historic Qualities*: High
- h) *Physical/Aesthetic / Architectural Qualities*: High
- i) *Context or Group Values*: High
- j) *Technological Qualities*: outstanding
- k) *Archaeological Qualities*; (not assessed)
- l) *Cultural Qualities*: High.

Built in 1932, the tower is considered to be of *highly significant heritage value*. It is associated with an important aspect of Hamilton's history; the development of infrastructure and public services.

It is of great significance for its innovative structural design using reinforced concrete and welded steel. It is a comparatively rare example of a utilitarian structure, designed to be an architectural landmark.

It demonstrates the skills of Borough engineer Rupert Worley, who became of New Zealand's most respected consulting engineers and project engineer James Baird, who went on to become Borough Engineer and City Engineer.

The tower is also significant for its associations with Christchurch-based contractors WM Fadder & Co Ltd and partner in the firm, A H Barltrop who were responsible for construction of the tower.

Set in an elevated position with Lake Domain it is a landmark and makes an important contribution to the continuity and character of the Lake Domain landscape in Ruakiwi Road.

## 2. identification of the place

### 2.1 location

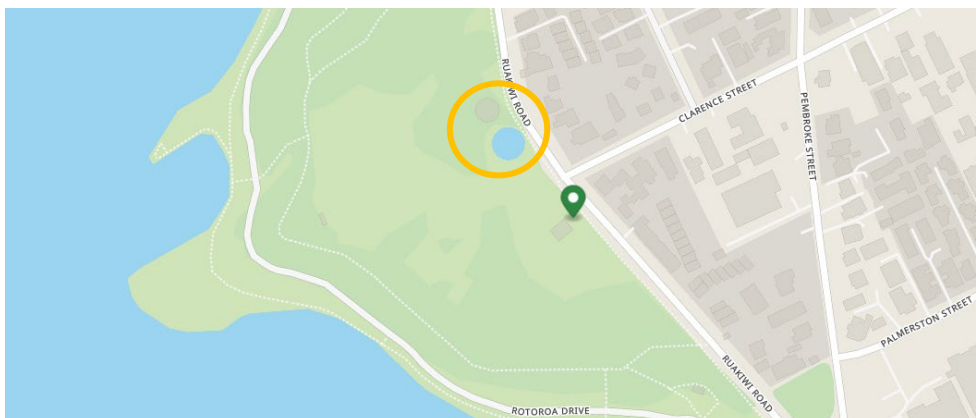


**Figure 7:** Aerial view of the wider context of the historic heritage-listed Ruakiwi Road Tower Reservoir (HCC Geomaps)

### 2.2 address

18 Ruakiwi Road, Hamilton.

The address appears to relate to a former dwelling adjacent to the heritage asset. That dwelling has been demolished. The Hamilton City Council GIS mapping fixes a “pin” to indicate 18 Ruakiwi Road to the south of the heritage tower reservoir.



**Figure 8:** Extract from the Hamilton City Council GIS maps showing the site identified at 18 Ruakiwi Road. The historic heritage-listed tower reservoir is circled and is to the immediate north of the map “pin”.

NZTM reference:

Easting: 1800560, Northing: 5814402

### 2.3 ownership

The Ruakiwi Water Tower is owned by the Hamilton City Council.

### 2.4 legal description

Lot 2 DP 16167

### 3. local authority status

#### 3.1 designation

The historic heritage-listed Ruakiwi Water Tower lies within the Destination Open Space Zone and is an area governed by Designation A67. This area is identified in the map generated by BBO at Figure 3 below.

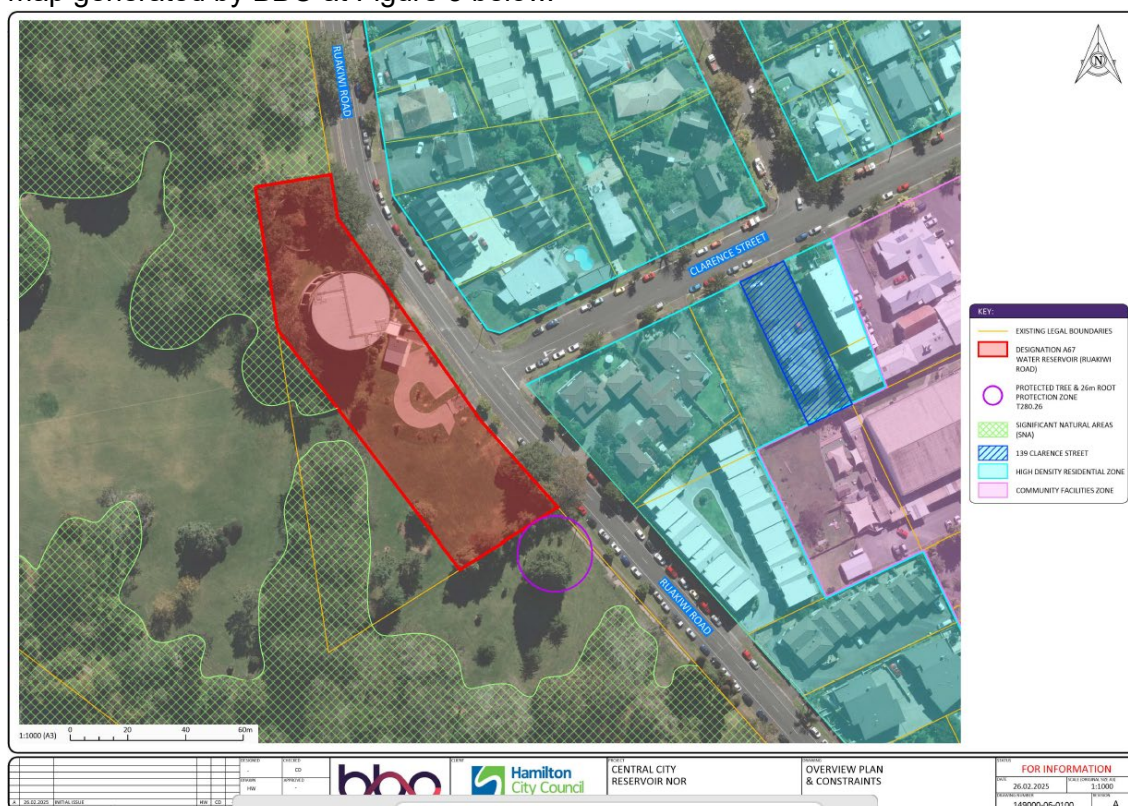


Figure 9: BBO plan showing the extent of the existing Designation 67 area.

#### 3.2 schedule 8A

The Ruakiwi Water Tower is included in *Schedule 8A: Built Heritage (structures, building, and associated sites)* of the HCC ODP as a Category A place with ID# H27 Map 45B, being an historic place of highly significant heritage value and is a place assessed as being of outstanding or high value in relation to one or more of the heritage assessment criteria and are considered to be of outstanding or high heritage value locally, regionally or nationally.

The Water Tower has been recognised in the ODP for the following qualities:

- a - historic qualities
- b – physical/aesthetic/architectural qualities
- c – context of group qualities
- d – technical qualities
- f – cultural qualities.

#### 3.3 historic summary

Construction of the Hamilton water tower was completed in February 1932 and it was described as the largest all-welded reinforced concrete structure in the southern hemisphere when built. The tower is described as 'a new technical development for reinforced concrete construction in New Zealand.'<sup>2</sup> The tower used an innovative

<sup>2</sup> Geoffrey Thornton, *Cast in Concrete: Concrete Construction in New Zealand 1850-1939*, Auckland, 1996, p.215

system of arc-welding for the reinforcing. James Reginald Baird of Hamilton Borough Council was the designer and project engineer and Borough Engineer, Rupert Worley, oversaw the project and was to become one of the best-known of New Zealand's engineering consultants. James Baird was later appointed Borough Engineer and then City Engineer. They presented a joint paper on the techniques used for the water tower at the International Congress of Bridge and Structural Engineering in Paris in 1932.<sup>3</sup>

The design incorporated arc-welded reinforcement rather than the normal method of overlapped reinforcing rods with hooks and bindings that would have required immensely thick concrete walls. Designs were peer reviewed by Vickerman and Lancaster, leading consulting Engineers in Wellington and by Edgecumbe and White, leading architects in Hamilton.

The water tower has a diameter of 25.6m and inside depth of 18.6 m with a capacity of 11,849,600 litres. It comprises a reinforced concrete wall with twenty Doric columns supporting a plastered frieze.<sup>4</sup> The columns are hollow and serve as hold-down ties for the wider upper tank, as well as taking overflow of water. Within the tower's concrete shell is a steel lining of 6mm thick Armco iron plate, welded to T-shaped iron frames which acted as formwork for the concrete. The use of welding reduced laps to just 76mm, achieving a significant cost saving.<sup>5</sup>

The surface of the concrete was ground to reveal the aggregate, without the need for an applied plaster finish. The concrete for the columns was made using a finer aggregate to achieve a contrast. The roof has steel trusses with purlins and proprietary metal roofing installed in 1973.

The contractors for the tower were Christchurch-based W. M Fadder & Co Ltd. A partner in the firm, A H Barltrop was responsible for the carrying out of the works and was known for his personal skills in welding.<sup>6</sup> Careful quality control was applied to all welding and a special technique developed to achieve earthquake resistance for what was a major public utility.

Hamilton Borough Council first provided a municipal water supply just after the turn of the 20th century, providing water for parts of Victoria Street, Anglesea Street as well as Collingwood, Clarence and Selkirk Streets located on route to the reservoir. By September 1903 there were 80 connections on the west side of Hamilton and by 1908 almost all of the west side had access to the municipal supply.<sup>7</sup> By 1925 the available water supply was insufficient to serve Hamilton's growing population and water pressure in the town centre was very poor. Options investigated including extending the existing pumped supply from the Waikato River, or use of a gravity-fed supply from the Kaniwhaniwha Stream on Pirongia Mountain. The latter would require construction of a much larger reservoir than the one existing at the time on the Ruakiwi Street hill. The alternative was to invest in a modern pumping station and filtration plant, together with a much larger reservoir in the reserve in Ruakiwi Street. Provision of a higher pressure water supply led to significant savings on insurance premiums for Hamilton property owners.<sup>8</sup>

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<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

<sup>6</sup> Auckland Waikato Historical Journal, No.32, 1978,p.21-23.

<sup>7</sup> P.J. Gibbons, *Astride the River, A History of Hamilton*, Christchurch, 1977, p.129.

<sup>8</sup> Auckland Waikato Historical Journal, No.32, 1978,p.21-23.

### **3.4 Historic Qualities** (Form prepared 2012. Revision 30 08 2012, Matthews & Matthews Architects Ltd)

#### **i) Associative Value:**

*The Historic Place has a direct association with or relationship to, a person, group, institution, event or activity that is of historical significance to Hamilton, the Waikato or New Zealand.*

It is significant for its association with Hamilton Borough Engineer at the time, Rupert Worley, who became of New Zealand's most respected consulting engineers.

The Hamilton Water Tower is also significant for its associations with project engineer James Baird, who went on to become Borough Engineer and City Engineer.

Rupert P. Worley was Borough Engineer from 1925 until 1942, the longest serving person in this role<sup>9</sup>. Shortly after his appointment in 1925, one of his first major tasks was to find a solution to Hamilton's water problems.<sup>10</sup> Investigations were carried out over a two year period, with the involvement of Assistant Engineer James Baird.

James Baird was Assistant Engineer and closely involved in the innovative engineering design and supervision of construction.<sup>11</sup> James Baird was later Borough Engineer, following Rupert Worley in this role from 1942 -43 and again from 1944-1947. Following WWII he was asked to prepare a ten-year plan for the development of Hamilton. Though many of his ideas were not realised, he is credited with introducing the people of Hamilton to the idea of planning on a grand scale.<sup>12</sup>

The tower is significant for its associations with Christchurch-based contractors W. M Fadder & Co Ltd and partner in the firm, A H Barltrop was responsible for the carrying out of the works.

#### **ii) Historic Pattern:**

*The Historic Place is associated with broad patterns of local, regional or national history, including development and settlement patterns, early or important transportation routes, social or economic trends and activities.*

The water tower is significant for its association with the development of public utilities by Hamilton Borough Council in the early decades of the 20th century, to support the growing population.

### **3.5 Physical/ Aesthetic / Architectural Qualities:**

#### **i Style/Design/Type:**

*The style of the Historic Place is representative of a significant development period in the city, region and or the nation; The Historic Place is associated with a significant activity, reflected in its design, function or type. The Historic Place has distinctive or special attributes of an aesthetic or functional nature which may include its design, form, massing, scale, proportions materials, ornamentation, period, craftsmanship, or other design element.*

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<sup>9</sup> Gibbons, p. 326.

<sup>10</sup> Auckland Waikato Historical Journal, No.32, 1978,p.21-23.

<sup>11</sup> Ibid.

<sup>12</sup> Gibbons, p. 284-5 and 288-289.

The design of the water tower reflects the use of stripped Classical style used in the 1920s and 30s. Decorative elements based on classical models continued to be used, in a more restrained and simplified manner. Detailing often became flattened and elements such as cornices and parapets became more streamlined.

Above a plain base, the water tower incorporates twenty Doric columns, supporting a plastered frieze with cornice. The columns and frieze, though plainly detailed, create strong relief to the cylindrical form. The tower is significant as a comparatively early example in New Zealand that uses reinforced concrete as the finished architectural surface.

The water tower is good example of a comparatively unusual building type in New Zealand. Structures for municipal water storage were often utilitarian in nature, however the Hamilton water tower is one of a small number of these structures that were designed to be architectural landmarks. Other significant examples include the Addington water tower in Christchurch, built in 1883 to provide a high pressure water supply to the railway workshops, the Bastia Hill water tower in Wanganui, built in 1927, Hawera water tower built in 1914 for municipal supply, the Bulls water tower and the Cambridge water tower built in 1902-3.<sup>13</sup> The Hamilton water tower is located in an elevated position within a park amidst mature trees and was designed to complement the park landscape.

#### **ii Designer or Builder:**

*The architect, designer, engineer or builder for the Historic Place was a notable practitioner or made a significant contribution to the city, region or nation, and the place enlarges understanding of their work.*

The water tower is significant as an example of an innovative design by Hamilton Borough Engineers Rupert Worley and James Baird. They presented a joint paper on the techniques used for the water tower at the International Congress of Bridge and Structural Engineering in Paris in 1932.<sup>14</sup>

Rupert P Worley was Borough Engineer from 1925 until 1942, the longest serving person in this role.<sup>15</sup> Shortly after his appointment in 1925, one of his first major tasks was to find a solution to Hamilton's water problems.<sup>16</sup> Investigations were carried out over a two year period, with the involvement of Assistant Engineer James Baird.

James Baird was Assistant Engineer and closely involved in the innovative engineering design and supervision of construction.<sup>17</sup> James Baird was later Borough Engineer, following Rupert Worley in this role from 1942 -43 and again from 1944-1947. Following WWII he was asked to prepare a ten-year plan for the development of Hamilton. Though many of his ideas were not realised, he is credited with introducing the people of Hamilton with the idea of planning on a grand scale.<sup>18</sup>

The tower is significant for its associations with Christchurch-based contractors WM Fadder & Co Ltd and partner in the firm, A H Barltrop was responsible for the carrying out of the works.

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<sup>13</sup> New Zealand Historic Places Trust Register, no.s 5390, 970, 143, 4230, 4210, 394, 1211 and 753.

<sup>14</sup> Ibid.

<sup>15</sup> Gibbons, p. 326.

<sup>16</sup> Auckland Waikato Historical Journal, No.32, 1978,p.21-23.

<sup>17</sup> Ibid.

<sup>18</sup> Gibbons, p. 284-5 and 288-289.

**iii Rarity:**

*The Historic Place or elements of it are unique, uncommon or rare at a local, district or national level, or in relation to particular historic themes.*

The water tower is good example of a comparatively unusual building type in New Zealand. Structures for municipal water storage were often utilitarian in nature, however the Hamilton water tower is one of a small number of these structures that were designed to be architectural landmarks.

**iv Integrity:**

*The Historic Place has integrity, retaining significant features from its time of construction, or later periods when important modifications or additions were carried out.*

The tower remains largely unchanged. A steel roof was added in 1973. The tower has been emptied several times and has regular maintenance checks.

**3.6 Context or Group Values**

**i *The physical and visual character of the site or setting of the Historic Place is of importance to the value of the place;***

The Hamilton water tower is located in an elevated position within Lake Domain, amidst mature trees, and intentionally complements the park landscape.

**ii *The Historic Place is an important visual landmark or feature***

The water tower is built on the highest point within Hamilton city, within Lake Domain and is a local landmark.

**iii *The Historic Place makes an important contribution to the continuity or character of the street, neighbourhood, area or landscape.***

The water tower has been part of the park landscape since 1932 and makes an important contribution to the park landscape.

**iv *The Historic Place is part of a group or collection of places which together have a coherence because of such factors as history, age, appearance, style, scale, materials, proximity or use, landscape or setting which, when considered as a whole, amplify the heritage values of the place and group/landscape or extend its significance.***

Other features of interest in the area around the water tower include the circular base of another reservoir and concrete structures set into the ground to the north of the water tower. The house to the south of the tower was on the same Lot and should be further researched. [post HCC assessment note: the house was however demolished by Council some years ago].

**3.7 Technological Qualities:**

*The Historic Place is representative of innovative or important methods of construction, contains unusual construction materials, is an early example of the use of a particular construction technique or has potential to contribute information about technological or engineering history*

The Hamilton water tower is of great significance for its engineering design and method of construction. It was the largest all-welded reinforced concrete structure in the Southern Hemisphere when built and incorporated an innovative system of arc-

welding for the reinforcing in the concrete instead of laps and hoops tied with wire. The techniques used for the construction of the water tower were presented by the engineers at the International Congress of Bridge and Structural Engineering in Paris in 1932.<sup>19</sup>

The terms *reinforced concrete*, *ferro-concrete*, and *concrete-steel armoured concrete* were originally applied to systems where steel was inserted into concrete to improve its strength. *Reinforced concrete* became the term commonly used to define the use of mild steel bars, wire and stirrups encased in concrete, formed to make columns, beams floor and wall slabs.

Prior to the introduction of patented reinforced concrete construction systems, reinforcement used was generally wrought iron, which although resistant to corrosion, did not have the tensile strength of mild steel. Innovative engineers and designers at the time were keen to construct in concrete due to the perceived advantages including its resistance to fire and earthquake.

The earliest concrete used in New Zealand was made using natural cement or hydraulic lime. From around 1860 imported Portland cement began to replace lime before New Zealand cement became widely used in the late 1880s. By 1900, Portland cement was the preferred agent in the concrete mix. The 18m high water tank at the New Zealand Railways workshops in Addington, Christchurch, built in 1883, is recognised as one of the earliest reinforced concrete structures in New Zealand.

By the late 19th century there were a number of patented systems of reinforced concrete being used including the Hennebique, Coignet, and Considere systems.<sup>20</sup> In Auckland, the Hennebique system was first utilised in the construction of the Auckland Harbour Board wharves beginning in 1903 with the extension of the Railway Wharf in ferro-concrete and in the construction of bridges including Grafton Bridge built in 1907-1910.<sup>21</sup> In 1909 the proprietary product 'Camerated Concrete' began to be advertised in New Zealand. Camerated concrete was a patented system of hollow wall construction devised by Henry A Goddard in Australia. It was patented in 1905 and marketed in New Zealand by Auckland H. Leslie Friend.<sup>22</sup> The use of reinforced concrete in the construction of buildings commenced around the early 1900s.

In 1906 the New Zealand Express Company Building in Christchurch was constructed with a reinforced concrete structure to the basement and lower two floors and steel frame above. In September 1910 the New Zealand Herald had remarked that concrete was increasingly used for construction and that 'Several reinforced concrete structures have already gone up, and it is expected that the number will be added to shortly.'<sup>23</sup> Early Auckland examples built with a reinforced concrete frame include the 1911 Yates Building and four storey Seddon Block at Auckland Institute of Technology in Wellesley Street, built between 1909 and 1912.<sup>24</sup> Concrete framed dairy factories are some of

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<sup>19</sup> Ibid.

<sup>20</sup> ICS Reference Library, 1909 International Textbook Company Stationer's Hall London, Volume 39, Section 16, Page 34

<sup>21</sup> Geoffrey Thornton, *Cast in Concrete: Concrete Construction in New Zealand 1850-1939*, Auckland, 1996, pp.16, 17-18, 98, 105 and 112.

<sup>22</sup> Thornton, pp.117-118.

<sup>23</sup> New Zealand Herald., 20 September 1910, p.7.

<sup>24</sup> Thornton, p.130. Rich and Jeffreys are recorded as contractors on the plaque in the building and Rich and Roche are identified as the engineers on the original watercolour drawing, Sir George Grey Special Collections, Auckland Libraries, 31-62615

the early examples in the Waikato. Hamilton architect F C Daniel used concrete for the construction of commercial structures as well as domestic dwellings; he designed a number of buildings using the 'Camerated Concrete' system, and 'reinforced concrete'. Examples include the Waikato County Council Offices built in 1910 in camerated concrete.<sup>25</sup> The benefits of using reinforced concrete included its strength, fire resistance, vermin resistance as well as claims that it was sound-proof.<sup>26</sup> A number of patents for reinforced concrete systems were applied for and other concrete construction systems promoted around this time.

From the 1920s onwards there was a much greater acceptance of reinforced concrete as a comprehensive construction medium.<sup>27</sup> Apart from the traditional use of plastered finishes, the more successful development of finished concrete surfaces involving texture, off-the-form, fairfaced, exposed aggregate and so on occurred following WWII.<sup>28</sup>

In addition to its innovative welded reinforcement system, the Hamilton water tower is significant as a comparatively early example that uses reinforced concrete as the finished architectural surface.

### **3.8 Archaeological Qualities:**

- i The potential of the Historic Place to define or expand knowledge of earlier human occupation, activities or events through investigation using archaeological methods.*
- ii The potential of the Historic Place to provide evidence to address archaeological research questions.*
- iii The Historic Place is registered by the New Zealand Historic Places Trust for its archaeological values, or is recorded by the New Zealand Archaeological Association Site Recoding Scheme, or is an 'archaeological site' as defined by the Historic Places Act 1993.*

(Not assessed as part of this evaluation).

### **3.9 Cultural Qualities:**

*The Historic Place is important as a focus of cultural sentiment; The Historic Place significantly contributes to community identity or sense of place or provides evidence of cultural or historical continuity, the Historic Place has symbolic or commemorative significance to people who use or have used it, or to the descendants of such people. The interpretative capacity of the Historic Place can potentially increase understanding of past lifestyles or events.*

The water tower is a local landmark and contributes to community identity and sense of place. It has been included in a publication celebrating Hamilton's historic buildings and is recognised as being of value by its inclusion in the in the Schedule of Heritage Items Appendix 2.3-II in the Hamilton District Plan and is registered by the New Zealand Historic Places Trust.

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<sup>25</sup> Research undertaken by Jennie Gainsford in 2011. Waikato County Council Minutes, 27 January 1910.

<sup>26</sup> Article on reinforced concrete, Building Progress December 1 1909

<sup>27</sup> Thornton, p.168.

<sup>28</sup> Thornton, p.156.

### 3.10 Scientific Qualities:

*The potential for the Historic Place to contribute information about an historic figure, event, phase or activity. The degree to which the Historic Place may contribute further information and the importance, rarity, quality or representativeness of the data involved.*

It has potential to increase understanding of Hamilton's history including provision of water supply, its innovative structural design by Borough engineers and method of construction by W. McFadder and Co. Ltd. It has potential to contribute information as an early example of exposed concrete as the intended architectural finish.

### 3.11 Summary of assessed significance and management category

The place is scheduled as a Category A place in the HCC Schedule 8A heritage list. The place is considered to be of *highly significant heritage value* locally, regionally and nationally, and has *outstanding* or *high* significance in relation to the following criteria:

- m) *Historic Qualities*: High
- n) *Physical/Aesthetic / Architectural Qualities*: High
- o) *Context or Group Values*: High
- p) *Technological Qualities*: outstanding
- q) *Archaeological Qualities*; (not assessed)
- r) *Cultural Qualities*: High.

Built in 1932, the tower is considered to be of *highly significant heritage value*. It is associated with an important aspect of Hamilton's history; the development of infrastructure and public services. It is of great significance for its innovative structural design using reinforced concrete and welded steel. It is a comparatively rare example of a utilitarian structure, designed to be an architectural landmark. It demonstrates the skills of Borough engineer Rupert Worley, who became of New Zealand's most respected consulting engineers and project engineer James Baird, who went on to become Borough Engineer and City Engineer. The tower is also significant for its associations with Christchurch-based contractors WM Fadder & Co Ltd and partner in the firm, A H Barltrop who were responsible for construction of the tower. Set in an elevated position with Lake Domain it is a landmark and makes an important contribution to the continuity and character of the Lake Domain landscape in Ruakiwi Road.

## 4. archaeological status

The site does not appear on ArchSite national database of recorded archaeological sites in Aotearoa New Zealand administered by the New Zealand Archaeological Association.

## 5. heritage new zealand listing

The Water Tower is listed in the New Zealand Heritage List administered by HNZPT as a Category 2 place, List # 4210.

The following section draws from the HNZPT List Entry record. The Form was prepared 2012 with Revision 30 08 2012 by Matthews & Matthews Architects Ltd.

### 5.1 historic summary

Construction of the Hamilton water tower was completed in February 1932 and it was described as the largest all-welded reinforced concrete structure in the southern hemisphere when built. The tower is described as 'a new technical development for reinforced concrete construction in New Zealand.'<sup>29</sup> The tower used an innovative system of arc-welding for the reinforcing. James Reginald Baird of Hamilton Borough Council was the designer and project engineer and Borough Engineer, Rupert Worley, oversaw the project and was to become one of the best-known of New Zealand's engineering consultants. James Baird was later appointed Borough Engineer and then City Engineer. They presented a joint paper on the techniques used for the water tower at the International Congress of Bridge and Structural Engineering in Paris in 1932.<sup>30</sup>

The design incorporated arc-welded reinforcement rather than the normal method of overlapped reinforcing rods with hooks and bindings that would have required immensely thick concrete walls. Designs were peer reviewed by Vickerman and Lancaster, leading consulting Engineers in Wellington and by Edgecumbe and White, leading architects in Hamilton.

The water tower has a diameter of 25.6m and inside depth of 18.6 m with a capacity of 11,849,600 litres. It comprises a reinforced concrete wall with twenty Doric columns supporting a plastered frieze.<sup>31</sup> The columns are hollow and serve as hold-down ties for the wider upper tank, as well as taking overflow of water. Within the tower's concrete shell is a steel lining of 6mm thick Armco iron plate, welded to T-shaped iron frames which acted as formwork for the concrete. The use of welding reduced laps to just 76mm, achieving a significant cost saving.<sup>32</sup>

The surface of the concrete was ground to reveal the aggregate, without the need for an applied plaster finish. The concrete for the columns was made using a finer aggregate to achieve a contrast. The roof has steel trusses with purlins and proprietary metal roofing installed in 1973.

The contractors for the tower were Christchurch-based W. M Fadder & Co Ltd. A partner in the firm, A H Barltrop was responsible for the carrying out of the works and was known for his personal skills in welding.<sup>33</sup> Careful quality control was applied to all welding and a special technique developed to achieve earthquake resistance for what was a major public utility.

Hamilton Borough Council first provided a municipal water supply just after the turn of the 20th century, providing water for parts of Victoria Street, Anglesea Street as well as

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<sup>29</sup> Geoffrey Thornton, *Cast in Concrete: Concrete Construction in New Zealand 1850-1939*, Auckland, 1996, p.215

<sup>30</sup> *Ibid.*

<sup>31</sup> *Ibid.*

<sup>32</sup> *Ibid.*

<sup>33</sup> Auckland Waikato Historical Journal, No.32, 1978, p.21-23

Collingwood, Clarence and Selkirk Streets located on route to the reservoir. By September 1903 there were 80 connections on the west side of Hamilton and by 1908 almost all of the west side had access to the municipal supply.<sup>34</sup> By 1925 the available water supply was insufficient to serve Hamilton's growing population and water pressure in the town centre was very poor. Options investigated including extending the existing pumped supply from the Waikato River, or use of a gravity-fed supply from the Kaniwhaniwha Stream on Pirongia Mountain. The latter would require construction of a much larger reservoir than the one existing at the time on the Ruakiwi Street hill. The alternative was to invest in a modern pumping station and filtration plant, together with a much larger reservoir in the reserve in Ruakiwi Street. Provision of a higher-pressure water supply led to significant savings on insurance premiums for Hamilton property owners.<sup>35</sup>

## **5.2 historic qualities** (the HNZPT assessment criteria are provided in italics)

### **i) Associative Value:**

*The Historic Place has a direct association with or relationship to, a person, group, institution, event or activity that is of historical significance to Hamilton, the Waikato or New Zealand.*

It is significant for its association with Hamilton Borough Engineer at the time, Rupert Worley, who became of New Zealand's most respected consulting engineers.

The Hamilton Water Tower is also significant for its associations with project engineer James Baird, who went on to become Borough Engineer and City Engineer.

Rupert P. Worley was Borough Engineer from 1925 until 1942, the longest serving person in this role.<sup>36</sup> Shortly after his appointment in 1925, one of his first major tasks was to find a solution to Hamilton's water problems.<sup>37</sup> Investigations were carried out over a two-year period, with the involvement of Assistant Engineer James Baird.

James Baird was Assistant Engineer and closely involved in the innovative engineering design and supervision of construction.<sup>38</sup> James Baird was later Borough Engineer, following Rupert Worley in this role from 1942 -43 and again from 1944-1947. Following WWII he was asked to prepare a ten-year plan for the development of Hamilton. Though many of his ideas were not realised, he is credited with introducing the people of Hamilton to the idea of planning on a grand scale.<sup>39</sup>

The tower is significant for its associations with Christchurch-based contractors W. M Fadder & Co Ltd and partner in the firm, A H Barltrop was responsible for the carrying out of the works.

### **ii) Historic Pattern:**

*The Historic Place is associated with broad patterns of local, regional or national history, including development and settlement patterns, early or important transportation routes, social or economic trends and activities.*

<sup>34</sup> P.J. Gibbons, *Astride the River, A History of Hamilton*, Christchurch, 1977, p.129

<sup>35</sup> Auckland Waikato Historical Journal, No.32, 1978,p.21-23

<sup>36</sup> Gibbons, p. 326

<sup>37</sup> Auckland Waikato Historical Journal, No.32, 1978,p.21-23

<sup>38</sup> Ibid.

<sup>39</sup> Gibbons, p. 284-5 and 288-289.

The water tower is significant for its association with the development of public utilities by Hamilton Borough Council in the early decades of the 20th century, to support the growing population.

**5.3 *Physical/ Aesthetic / Architectural Qualities*** (the HNZPT assessment criteria are provided in italics)

**i) *Style/Design/Type***

*The style of the Historic Place is representative of a significant development period in the city, region and or the nation; The Historic Place is associated with a significant activity, reflected in its design, function or type. The Historic Place has distinctive or special attributes of an aesthetic or functional nature which may include its design, form, massing, scale, proportions materials, ornamentation, period, craftsmanship, or other design element.*

The design of the water tower reflects the use of stripped Classical style used in the 1920s and 30s. Decorative elements based on classical models continued to be used, in a more restrained and simplified manner. Detailing often became flattened and elements such as cornices and parapets became more streamlined.

Above a plain base, the water tower incorporates twenty Doric columns, supporting a plastered frieze with cornice. The columns and frieze, though plainly detailed, create strong relief to the cylindrical form. The tower is significant as a comparatively early example in New Zealand that uses reinforced concrete as the finished architectural surface.

The water tower is good example of a comparatively unusual building type in New Zealand. Structures for municipal water storage were often utilitarian in nature, however the Hamilton water tower is one of a small number of these structures that were designed to be architectural landmarks. Other significant examples include the Addington water tower in Christchurch, built in 1883 to provide a high pressure water supply to the railway workshops, the Bastia Hill water tower in Wanganui, built in 1927, Hawera water tower built in 1914 for municipal supply, the Bulls water tower and the Cambridge water tower built in 1902-3.<sup>40</sup> The Hamilton water tower is located in an elevated position within a park amidst mature trees and was designed to complement the park landscape.

**ii *Designer or Builder***

*The architect, designer, engineer or builder for the Historic Place was a notable practitioner or made a significant contribution to the city, region or nation, and the place enlarges understanding of their work.*

The water tower is significant as an example of an innovative design by Hamilton Borough Engineers Rupert Worley and James Baird. They presented a joint paper on the techniques used for the water tower at the International Congress of Bridge and Structural Engineering in Paris in 1932.<sup>41</sup>

Rupert P Worley was Borough Engineer from 1925 until 1942, the longest serving person in this role.<sup>42</sup> Shortly after his appointment in 1925, one of his first major tasks

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<sup>40</sup> New Zealand Historic Places Trust Register, no.s 5390, 970, 143, 4230, 4210, 394, 1211 and 753

<sup>41</sup> Ibid.

<sup>42</sup> Gibbons, p. 326.

was to find a solution to Hamilton's water problems.<sup>43</sup> Investigations were carried out over a two-year period, with the involvement of Assistant Engineer James Baird.

James Baird was Assistant Engineer and closely involved in the innovative engineering design and supervision of construction.<sup>44</sup> James Baird was later Borough Engineer, following Rupert Worley in this role from 1942 -43 and again from 1944-1947. Following WWII he was asked to prepare a ten-year plan for the development of Hamilton. Though many of his ideas were not realised, he is credited with introducing the people of Hamilton with the idea of planning on a grand scale.<sup>45</sup>

The tower is significant for its associations with Christchurch-based contractors WM Fadder & Ltd and partner in the firm, A H Barltrop was responsible for the carrying out of the works.

### **iii     Rarity**

*The Historic Place or elements of it are unique, uncommon or rare at a local, district or national level, or in relation to particular historic themes.*

The water tower is good example of a comparatively unusual building type in New Zealand. Structures for municipal water storage were often utilitarian in nature, however the Hamilton water tower is one of a small number of these structures that were designed to be architectural landmarks.

### **iv     Integrity**

*The Historic Place has integrity, retaining significant features from its time of construction, or later periods when important modifications or additions were carried out.*

The tower remains in largely unchanged. A steel roof was added in 1973. The tower has been emptied several times and has regular maintenance checks.

## **5.4     Context or Group Values** (the HNZPT assessment criteria are provided in italics)

*i     The physical and visual character of the site or setting of the Historic Place is of importance to the value of the place;*

The Hamilton water tower is located in an elevated position within Lake Domain, amidst mature trees, and intentionally complements the park landscape.

*ii    The Historic Place is an important visual landmark or feature.*

The water tower is built on the highest point within Hamilton city, within Lake Domain and is a local landmark.

*iii   The Historic Place makes an important contribution to the continuity or character of the street, neighbourhood, area or landscape.*

The water tower has been part of the park landscape since 1932 and makes an important contribution to the park landscape.

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<sup>43</sup> Auckland Waikato Historical Journal, No.32, 1978,p.21-23

<sup>44</sup> Ibid.

<sup>45</sup> Gibbons, p. 284-5 and 288-289.

*iv The Historic Place is part of a group or collection of places which together have a coherence because of such factors as history, age, appearance, style, scale, materials, proximity or use, landscape or setting which, when considered as a whole, amplify the heritage values of the place and group/ landscape or extend its significance.*

Other features of interest in the area around the water tower include the circular base of another reservoir and concrete structures set into the ground to the north of the water tower.

## 5.5 Technological Qualities

*The Historic Place is representative of innovative or important methods of construction, contains unusual construction materials, is an early example of the use of a particular construction technique or has potential to contribute information about technological or engineering history.*

The Hamilton water tower is of great significance for its engineering design and method of construction. It was the largest all-welded reinforced concrete structure in the Southern Hemisphere when built and incorporated an innovative system of arc-welding for the reinforcing in the concrete instead of laps and hoops tied with wire. The techniques used for the construction of the water tower were presented by the engineers at the International Congress of Bridge and Structural Engineering in Paris in 1932.<sup>46</sup>

The terms *reinforced concrete*, *ferro-concrete*, and *concrete-steel armoured concrete* were originally applied to systems where steel was inserted into concrete to improve its strength. *Reinforced concrete* became the term commonly used to define the use of mild steel bars, wire and stirrups encased in concrete, formed to make columns, beams floor and wall slabs.

Prior to the introduction of patented reinforced concrete construction systems, reinforcement used was generally wrought iron, which although resistant to corrosion, did not have the tensile strength of mild steel. Innovative engineers and designers at the time were keen to construct in concrete due to the perceived advantages including its resistance to fire and earthquake.

The earliest concrete used in New Zealand was made using natural cement or hydraulic lime. From around 1860 imported Portland cement began to replace lime before New Zealand cement became widely used in the late 1880s. By 1900, Portland cement was the preferred agent in the concrete mix. The 18m high water tank at the New Zealand Railways workshops in Addington, Christchurch, built in 1883, is recognised as one of the earliest reinforced concrete structures in New Zealand.

By the late 19th century there were a number of patented systems of reinforced concrete being used including the Hennebique, Coignet, and Considere systems.<sup>47</sup> In Auckland, the Hennebique system was first utilised in the construction of the Auckland Harbour Board wharves beginning in 1903 with the extension of the Railway Wharf in ferro-concrete and in the construction of bridges including Grafton Bridge built in 1907-

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<sup>46</sup> Ibid.

<sup>47</sup> ICS Reference Library,, 1909 International Textbook Company Stationer's Hall London, Volume 39, Section 16, Page 34

1910.<sup>48</sup> In 1909 the proprietary product 'Camerated Concrete' began to be advertised in New Zealand. Camerated concrete was a patented system of hollow wall construction devised by Henry A Goddard in Australia. It was patented in 1905 and marketed in New Zealand by Auckland H. Leslie Friend.<sup>49</sup> The use of reinforced concrete in the construction of buildings commenced around the early 1900s. In 1906 the New Zealand Express Company Building in Christchurch was constructed with a reinforced concrete structure to the basement and lower two floors and steel frame above.

In September 1910 the New Zealand Herald had remarked that concrete was increasingly used for construction and that 'Several reinforced concrete structures have already gone up, and it is expected that the number will be added to shortly.'<sup>50</sup> Early Auckland examples built with a reinforced concrete frame include the 1911 Yates Building and four storey Seddon Block at Auckland Institute of Technology in Wellesley Street, built between 1909 and 1912.<sup>51</sup> Concrete framed dairy factories are some of the early examples in the Waikato. Hamilton architect F C Daniel used concrete for the construction of commercial structures as well as domestic dwellings; he designed a number of buildings using the 'Camerated Concrete' system, and 'reinforced concrete'. Examples include the Waikato County Council Offices built in 1910 in camerated concrete.<sup>52</sup> The benefits of using reinforced concrete included its strength, fire resistance, vermin resistance as well as claims that it was sound-proof.<sup>53</sup> A number of patents for reinforced concrete systems were applied for and other concrete construction systems promoted around this time.

From the 1920s onwards there was a much greater acceptance of reinforced concrete as a comprehensive construction medium.<sup>54</sup> Apart from the traditional use of plastered finishes, the more successful development of finished concrete surfaces involving texture, off-the-form, fairfaced, exposed aggregate and so on occurred following WWII.<sup>55</sup>

In addition to its innovative welded reinforcement system, the Hamilton water tower is significant as a comparatively early example that uses reinforced concrete as the finished architectural surface.

## **5.6 Archaeological Qualities:**

*i The potential of the Historic Place to define or expand knowledge of earlier human occupation, activities or events through investigation using archaeological methods.*

*ii The potential of the Historic Place to provide evidence to address archaeological research questions.*

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<sup>48</sup> Geoffrey Thornton, *Cast in Concrete: Concrete Construction in New Zealand 1850-1939*, Auckland, 1996, pp.16, 17-18, 98, 105 and 112

<sup>49</sup> Thornton, pp.117-118.

<sup>50</sup> New Zealand Herald., 20 September 1910, p.7.

<sup>51</sup> Thornton, p.130. Rich and Jeffreys are recorded as contractors on the plaque in the building and Rich and Roche are identified as the engineers on the original watercolour drawing, Sir George Grey Special Collections, Auckland Libraries, 31-62615.

<sup>52</sup> Research undertaken by Jennie Gainsford in 2011. Waikato County Council Minutes, 27 January 1910.

<sup>53</sup> Article on reinforced concrete, *Building Progress* December 1 1909

<sup>54</sup> Thornton, p.168.

<sup>55</sup> Thornton, p.156.

*iii The Historic Place is registered by the New Zealand Historic Places Trust for its archaeological values, or is recorded by the New Zealand Archaeological Association Site Recording Scheme, or is an 'archaeological site' as defined by the Historic Places Act 1993.*

(Not assessed as part of this evaluation).

#### **5.7 Cultural Qualities:**

*The Historic Place is important as a focus of cultural sentiment; The Historic Place significantly contributes to community identity or sense of place or provides evidence of cultural or historical continuity, the Historic Place has symbolic or commemorative significance to people who use or have used it, or to the descendants of such people. The interpretative capacity of the Historic Place can potentially increase understanding of past lifestyles or events.*

The water tower is a local landmark and contributes to community identity and sense of place. It has been included in a publication celebrating Hamilton's historic buildings and is recognised as being of value by its inclusion in the in the Schedule of Heritage Items Appendix 8A in the Hamilton District Plan and is registered by the New Zealand Historic Places Trust.

#### **5.8 Scientific Qualities:**

*The potential for the Historic Place to contribute information about an historic figure, event, phase or activity. The degree to which the Historic Place may contribute further information and the importance, rarity, quality or representativeness of the data involved.*

It has the potential to increase understanding of Hamilton's history including provision of water supply, its innovative structural design by Borough engineers and method of construction by W. McFadder and Co. Ltd. It has the potential to contribute information as an early example of exposed concrete as the intended architectural finish.

#### **5.9 Summary of assessed significance and management category**

The place is scheduled in Category A. The place is considered to be of *highly significant heritage value* locally, regionally and nationally, and has *outstanding or high* significance in relation to the following criteria:

- a) Historic Qualities; High
- b) Physical/Aesthetic / Architectural Qualities; High
- c) Context or Group Values; High
- d) Technological Qualities; outstanding
- e) Archaeological Qualities;(not assessed)
- f) Cultural Qualities, high.

Built in 1932, the tower is considered to be of *highly significant heritage value*. It is associated with an important aspect of Hamilton's history; the development of infrastructure and public services. It is of great significance for its innovative structural design using reinforced concrete and welded steel. It is a comparatively rare example of a utilitarian structure, designed to be an architectural landmark. It demonstrates the skills of Borough engineer Rupert Worley, who became of New Zealand's most respected consulting engineers and project engineer James Baird, who went on to become Borough Engineer and City Engineer. The tower is also significant for its

associations with Christchurch-based contractors WM Fadder & Co Ltd and partner in the firm, A H Barltrop who were responsible for construction of the tower. Set in an elevated position with Lake Domain it is a landmark and makes an important contribution to the continuity and character of the Lake Domain landscape in Ruakiwi Road.

## **6. setting and vistas**

Setting is the surroundings in which an asset is experienced and may therefore be more extensive than its curtilage. All heritage assets have a setting, irrespective of the form in which they survive and whether they are designated or not. A thorough assessment of the impact on setting needs to take into account, and be proportionate to, the significance of the heritage asset under consideration and the degree to which proposed changes enhance or detract from that significance and the ability to appreciate it.

Consideration of the contribution of setting to the significance of heritage assets, and how it can enable that significance to be appreciated, will almost always include the consideration of views. The staged approach to taking decisions on setting can also be used to assess the contribution of a view, or views, to the significance of heritage assets and the ability to appreciate that significance. Views, however, can of course be valued for reasons other than their contribution to heritage significance. They may, for example, be related to the appreciation of the wider landscape, where there may be little or no association with heritage assets.

The contribution that setting makes to the significance of a heritage asset does not depend on there being public rights or an ability to access or experience that setting. This will vary over time and according to circumstance. While setting can be mapped in the context of an individual application or proposal, it cannot be definitively and permanently described for all time as a spatially bounded area or as lying within a set distance of a heritage asset. This is because the surroundings of a heritage asset will change over time, and because new information on heritage assets may alter what might previously have been understood to comprise their setting and the values placed on that setting and therefore the significance of the heritage asset. Setting is not itself a heritage asset, nor a heritage designation, although land comprising a setting may itself be designated. Its importance lies in what it contributes to the significance of the heritage asset or to the ability to appreciate that significance.

The following views describe the setting of the Heritage-listed Ruakiwi water tower from the Hamilton Lake Domain.



**Figure 10:** Hamilton Lake Domain.  
Various views towards the water tower have been recorded from the public realm following a site visit and establish existing views and/or views that may be enhanced.

**View A:** a view towards the water tower from the northwest lake edge.  
The water tower is circled.



**View B:** a view towards the water tower from the yacht club.  
The water tower is circled.



**View C:** a view towards the water tower from the southern lake edge residential area. The water tower is circled.



**View D:** a view towards the water tower from the end of the jetty on the eastern lake edge. The water tower is circled.



**View E:** a view towards the water tower from Clarence Street (heading south)  
The water tower is circled.



**View F:** a view towards the water tower from Ruakiwi Road (heading south)  
The water tower is behind the trees.



## 7. original drawings